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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/623,655

07/22/2003

Tomoji Hamada

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10/06/2004

WENDEROTH, LIND & PONACK, L.L.P.

2033 K STREET N. W.

SUITE 800

WASHINGTON, DC 20006-1021

EXAMINER

IM, JUNGHWA M

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/623,655

Applicant(s)

HAMADA, TOMOJI

Examiner

Junghwa M. Im

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 07/22/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites “the external electrodes and the metal plate being arranged on the same virtual plane.” The instant invention does not disclose what the virtual plane is.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 6 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Huang et al. (US 5982250), hereinafter Huang.

Regarding claim 1, Fig. 3 of Huang shows a semiconductor apparatus comprising:

a semiconductor device [110];

a first dielectric board [230 on the left] surrounding the semiconductor device;

a second dielectric board [228 on the left] surrounding the semiconductor device and arranged on the first dielectric board;

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a metal cover [204] arranged on the second dielectric board and above the semiconductor device;

plural external electrodes [contact vias 128 in Fig. 1 or conductive layer 216];

a first through-hole wiring [126] penetrating the first dielectric board and electrically connected with the external electrodes [col. 6, lines 9-14 or col. 5, lines 35-40];

a second through-hole wiring [126] penetrating the second dielectric board and connected with the semiconductor device [col. 6, lines 9-14]; and

an internal wiring [218; a conductive layer] inserted between the first dielectric board and the second dielectric board;

the semiconductor device being connected with the external electrodes via the first through-hole wiring, the second through-hole wiring and the internal wiring;

the first through-hole wiring and the second through-hole wiring being electrically connected with the internal wiring [218; a conductive layer] while being away from each other.

Regarding claim 3, Fig. 3 of Huang shows a semiconductor apparatus comprising:

a thin metal wire [114, 118] connected to the semiconductor device; and

an upper wiring arranged on the second dielectric board and connected with the second through-hole wiring [through microstrip 112];

the semiconductor device [110] being connected to the upper wiring via the thin metal wire.

Regarding claim 6, Fig. 1 of Huang shows a part of the external electrodes [216] is an external electrode for grounding, and an upper metal layer supplied with a ground potential via

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the external electrode for grounding is provided on an upper surface of the second dielectric board [col. 5, lines 24-46],

Regarding claim 7, Fig. 1 of Huang shows a part of the external electrodes [216] is an external electrode for grounding, and a lower metal layer supplied with a ground potential via the external electrode for grounding is provided on a lower surface of the first dielectric board [col. 5, lines 24-46].

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huang in view of Karnezos (US 6020637).

Regarding claim 2, Fig. 3 of Huang shows the most aspect of the instant invention except “the second through-hole wiring is arranged more closely to the semiconductor device than the first through-hole wiring is.” Fig. 1 of Karnezos shows a semiconductor device wherein the second through-hole wiring is arranged more closely to the semiconductor device than the first through-hole wiring is. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the teachings of Karnezos into the device of Huang in order to have the second through-hole wiring arranged more closely to the semiconductor device than the first through-hole wiring for easier signal routing.

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Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang in view of Adachi et al. (US 6255739), hereinafter Adachi.

Regarding claim 4, insofar as understood, Fig. 1 of Huang shows a metal plate [202] having the semiconductor device mounted thereon, however fails to show “the external electrodes and the metal plate being arranged on the same virtual plane.” Fig. 6 of Adachi shows the external electrodes [11C] and the metal plate [12C] being arranged on the same plane. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the teachings of Adachi into the device of Huang in order to have the external electrodes and the metal plate arranged on the same plane to reduce a package size.

Regarding claim 5 Fig. 1A of Adachi shows the whole external electrodes are arranged within an outer edge of the dielectric board [12].

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Junghwa M. Im whose telephone number is (571) 272-1655. The examiner can normally be reached on MON.-FRI. 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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